



Format of Automotive Repair Information Architecture and Specifications

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Abstract:

The objective of the Technical Committee, as stated in its Charter is:

To develop a standard format to enable access to emission-related repair, diagnostic and technical information with respect to the vehicles covered by the scope of Directive 70/220/EEC, i.e. passenger cars and light commercial vehicles.

The purpose of this deliverable is to specify the standard format referred to in the Charter.

Status:

This version of the document is being circulated to the members of the OASIS Auto Repair Technical Committee, for suggested amendments prior to a vote by the Committee. Send comments to the editors.

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64 1 Introduction

65 This document defines the technical specification for a standard format of emission-related repair,
66 diagnostic and technical information developed by the OASIS Technical Committee for the Format
67 of Automotive Repair Information (OASIS Autorepair).

68 The objective of the Technical Committee, as stated in its Charter [1], is:

69 *To develop a standard format to enable access to emission-related repair, diagnostic and*
70 *technical information with respect to the vehicles covered by the scope of Directive*
71 *70/220/EEC, i.e. passenger cars and light commercial vehicles.*

72 The purpose of this deliverable is to specify the standard format referred to in the Charter.

73 Development of the Specification was achieved with the co-operation of many parties across the
74 European automotive industry. Members of the Technical Committee worked in their capacity as
75 individuals, in many cases with the support of the organisations with whom they were employed.
76 Some of those organisations have made statements regarding their position in relation to the
77 publication of this Specification, which are included in Appendix C.

78 The Specification relates to ways of describing packages of emission-related repair, diagnostic and
79 technical information, using defined types of meta data, so that those packages can be located and
80 accessed through the Internet. These information types are divided into eight namespaces (related
81 to information classes such as vehicle identification, components, training). Overall, fewer than one
82 hundred meta data items are defined, which are sufficient to describe the information packages.

83 Also specified is a technical framework for representing the meta data, based on the existing
84 recommendation from the World Wide Web Consortium (W3C) known as the Resource Description
85 Framework (RDF) [N3,N4]. Using this framework for describing Internet resources, it is possible to
86 envisage efficient implementations using standard, possibly open source, tools and methods.

87 Accompanying this document, and forming part of the Technical Specification is a set of RDF
88 Schema definitions which specify formally the classes of resources, the properties (meta data) they
89 may take and the relationships between them.

90 The Specification does not specify the structure of the information itself, except to define a set of
91 preferred electronic formats (e.g. XML, HTML, PDF) for online delivery. It is not intended that
92 manufacturers should change the structure of the technical information they produce, except to
93 ensure that it is available as discrete information packages.

94 Although the Specification includes some examples of how the meta data could be used to
95 implement information systems, it does not prescribe the way in which such systems should
96 operate. Neither does it address the timescale or responsibility for implementation of compliant
97 systems.

2 Terminology

98

99 The key words *must*, *must not*, *required*, *shall*, *shall not*, *should*, *should not*, *recommended*, *may*,
100 and *optional* in this document are to be interpreted as described in IETF RFC 2119 [N1].

101 The following definitions provide the basis of the understanding of various terms used in this
102 document.

103

104 **Content** - The text, graphics and other multimedia data that forms the body of information about a
105 particular domain (in our case Automotive Repair Information).

106

107 **Information Package (package)** - A self-contained unit of content. The characteristics of an
108 information package are described in the Autorepair Requirements Specification [3] Ref 2.5.2:

109 "Information must be available in chargeable units which are reasonable in comparison to
110 the nature of the repair. When the manufacturer only holds historical information in hard
111 copy format or (for example) a large PDF file, it may be reasonable to only provide the
112 whole document."

113

114 **Meta Data** - Meta data are data about data. That is:

- 115 • Data that describe other data
- 116 • Data that describe content

117 The term may also refer to any file or database that holds information about another database's
118 structure, attributes, processing or changes.

119

120 **Namespace** - An XML namespace is a collection of names, identified by a URI reference [N2],
121 which are used in XML documents as element types and attribute names. (Definition taken from
122 Namespaces in XML [2].

123

124 **Vocabulary** - A vocabulary is a fixed set of names (terms), with a fixed meaning, that are used to
125 describe a particular domain (in our case Automotive Repair Information).

126 When used in the context of XML, a vocabulary can be:

- 127 • A namespace
- 128 • The elements and attributes in an XML DTD or Schema
- 129 • The properties in an RDF collection

130 In this sense a vocabulary can be viewed as the terms used for meta data, rather than content.

131

132 **Terminology** - A set of terms (words and phrases), with an agreed definition for a domain, used in
133 content or meta data. A full terminology may consist of a set of related entities:

- 134 • The base term
- 135 • A definition
- 136 • Synonyms (allowable alternative words or phrases for the same base term)

- 137 • Translations
- 138 • Variations (allowable in different contexts, eg parts of speech)
- 139
- 140 **Ontology** - An ontology is a shared set of terms describing an application domain which has a
141 common understanding by agents in that domain.
- 142 Ontologies establish a joint terminology between members of a community of interest. These
143 members can be human or automated agents.
- 144 An ontology consists of a vocabulary to represent the terms and a set of relationships between
145 those terms which define the common understanding.
- 146
- 147 **Taxonomy** - A hierarchical classification of terms in a domain. A taxonomy can be viewed as a
148 specialisation of an ontology in which the relationship defined between terms is class/sub-class.

3 Usage

149

150 The architecture specified here assumes that there are three types of 'actor' involved:

- 151
- Information Producers

152 Are the original creators of emissions-related repair information. They are the
153 manufacturers themselves.

- 154
- Information Consumers

155 Any aftermarket organisation that requires access to emissions-related repair information
156 and person entitled to see it.

- 157
- Information Providers

158 Any party which takes original emissions-related repair information from Information
159 Producers and delivers it on to Consumers, perhaps adding some value along the way (eg
160 by putting all information into a common format).

161 Some manufacturers could be both Producers and Providers.

162 There are two main ways in which it is envisaged that the meta data described in this could be
163 used:

- 164
- Use Case One

165 To describe the information sought by Information Consumers in order to make a repair.
166 This includes information about the vehicle given its VIN.

- 167
- Use Case Two

168 To describe information packages made available by Information Producers and Providers.

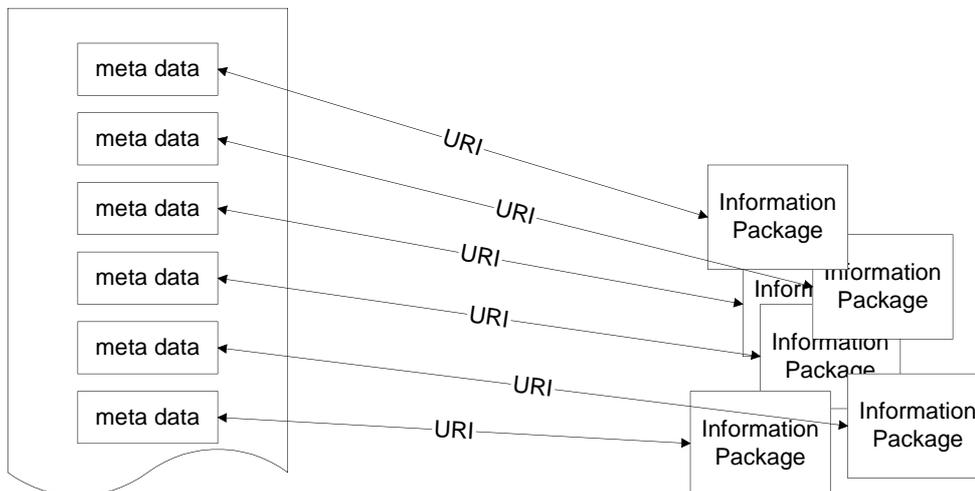
169

170 Further use cases are described in the document SC1-D4 Use Cases – for the OASIS Autorepair
171 Specification [4].

172 **4 Technical Framework**

173 **4.1 Overview**

174 This Specification defines the framework for a common meta data format, based on agreeing a
175 terminology and representation, whereby all information content within the scope of the
176 Specification can be *described* in a common way.



177

178 The content is split into a series of information packages which are described by collections of meta
179 data.

180 **4.2 Information Packages**

181 The only requirement of the content is that each package must be uniquely identified by a URI and
182 must be in one of the content formats defined in this specification (the properties `core:textFormat`
183 and `core:graphicFormat`) or be viewable using a freely available browser plug-in as specified by
184 `core:plugIn`.

185 The use of a URI to identify each information package does not imply that each package is freely
186 available on the Internet.

187 **4.3 Meta Data Framework**

188 The technical framework used to express meta data for OASIS AutoRepair is based on the W3C's
189 Resource Description Framework (RDF) [N3,N4]. RDF defines a framework by which *resources*
190 can be described by *meta data*. A resource is defined as any discrete object that can be referenced
191 by a URI. The main type (class) of resource described in this Specification is the Information
192 Package.

193 Using RDF, an item of meta data (the value of a property) can be expressed as a triple:

194

195 `<schema:property>Value</schema:property>`

196

197 The schema prefix indicates a namespace in which a collection of properties and resources are
198 defined. This Specification defines a number of such namespaces. The properties defined in a
199 namespace may be used to describe the information packages themselves, or other resources
200 defined in the namespace.

201 For example, the property textFormat specifies the text format of an information package – it is a
202 property of the package itself. That package may also be applicable to a vehicle of a particular
203 model. In this case *Vehicle* is a resource with a property *model*.

204 For the sake of consistency, the Specification defines a resource called Info, which represents an
205 information package, so that all the meta data associated with an information package are
206 properties of a resource.

207 Meta data describing a resource is contained in the RDF Description element, whose about
208 attribute specifies the URI of the resource being described.

209

```
210 <rdf:Description  
211   rdf:about="https://erwin.volkswagen.de/en/docs/bPAS53202020.pdf">  
212   <dc:Title>Body Repairs</dc:Title>  
213   <dc:Language>EN</dc:Language>  
214   <core:textFormat>PDF</core:textFormat>  
215   <core:Vehicle rdf:resource="#passat97"/>  
216   <access:Channel rdf:resource="#VW001"/>  
217   <dcterms:isPartOf  
218     rdf:resource="https://erwin.volkswagen.de/en/docs/bPAS5320.pdf"/>  
219 </rdf:Description>
```

220

221 This meta data describes the package identified by the URI
222 <https://erwin.volkswagen.de/en/docs/bPAS53202020.pdf>.

223

224 4.4 RDF and RDF Schema

225 This Specification defines, in a formal way, the resources and properties that can be used to
226 describe information packages. In RDF, such a formal specification is made using RDF Schema
227 [N4]. The following is an extract from the specification of RDF Schema;

228 *“The RDF data model, as specified in [N3] defines a simple model for describing*
229 *interrelationships among resources in terms of named properties and values. RDF*
230 *properties may be thought of as attributes of resources and in this sense correspond to*
231 *traditional attribute-value pairs. RDF properties also represent relationships between*
232 *resources. As such, the RDF data model can therefore resemble an entity-relationship*
233 *diagram. The RDF data model, however, provides no mechanisms for declaring these*
234 *properties, nor does it provide any mechanisms for defining the relationships between*
235 *these properties and other resources. That is the role of RDF Schema.”*

236 A set of RDF Schema definitions is provided as part of this OASIS TC Specification.

237 4.5 Resources with Properties

238 Resources within the Specification are described in Appendix A. Each resource has a number of
239 properties available for use within a metadata instance. A resource in RDF is defined in the schema
240 file as a Class, the example below shows the schema Class for the *core:Info* resource.

241

```
242 <rdfs:Class rdf:ID="Info">  
243   <rdfs:label>Top class for information about a resource</rdfs:label>
```

```
244 </rdfs:Class>
245
```

246

247 From this top level Class other classes or properties are attached. The example below shows how
248 the *TextFormat* Class and Property are defined within the *Info* Class.

249

```
250 <rdfs:Class rdf:ID="TextFormat">
251   <rdfs:label xml:lang="en">The format of the resource</rdfs:label>
252   <rdfs:subClassOf rdf:resource="#Info"/>
253 </rdfs:Class>
254
255 <rdfs:Property rdf:ID="textFormat">
256   <rdfs:label xml:lang="en">the text format type property</rdfs:label>
257   <rdfs:domain rdf:resource="#Info"/>
258   <rdfs:range rdf:resource="#TextFormat"/>
259 </rdfs:Property>
```

260

261 The above example states that *TextFormat* Class is a subClass of *Info* and the property *textFormat*
262 (notice the case change) has a *domain* of *Info*. This means that the property belongs as a child of
263 *Info* and its *range* is an Instance of the Class *TextFormat*.

264 In the example the range for the property *textFormat* should be an instance of the Class
265 *TextFormat*. In the specification, only a certain number of text formats have been approved. In the
266 schema, all the valid instances of the Class *TextFormat* have been created. The next example
267 shows two valid instances for the *TextFormat* Class.

268

```
269 <TextFormat rdf:ID="HTML">
270   <rdfs:label xml:lang="en">This document is in HTML format</rdfs:label>
271   <dc:format>text/html</dc:format>
272 </TextFormat>
273
274 <TextFormat rdf:ID="PDF">
275   <rdfs:label xml:lang="en">This document is in PDF format</rdfs:label>
276   <dc:format>application/pdf</dc:format>
277 </TextFormat>
```

278

279 These two instances have some simple explanations in English to describe what they are. Other
280 language variant descriptions can be added to these Class instances by adding another *rdfs:label*
281 with a different *xml:lang* attribute to describe the language used (ISO639-1 codes are used for
282 language variant descriptions).

283 The other element used in the instance is *dc:format* which describes the MIME type of the instance.
284 This has been added to the Class instance to relay more meaning about the instance. The use of
285 the Dublin Core namespace is an example of where it is best practice to use existing and
286 authoritative metadata where possible, rather than create new terms.

287 Finally the next example shows how the Class instance is referenced from within a metadata
288 description of a document.

289

```
290 <core:Info rdf:ID="PAS.5320.20.20">
291   <core:infoType rdf:resource="#core;Repair"/>
292   <core:textFormat rdf:resource="#core;PDF"/>
293 </core:Info>
```

294

295 This explains that the document being described has a text format of PDF. Referencing externally
296 described instances lessens the ambiguity in the description. Although it would be possible to have
297 the text format described as a string literal (plain text), referencing out allows for less human errors,
298 typos etc. which would reduce the quality of the overall metadata.

299 The following section contains more information on literals.

300 **4.6 Literals and Units**

301 A literal is a metadata value that doesn't reference an existing piece of information. Instead the
302 value is specified directly, either through manual keying by a user or through the use of a client
303 application. The example below shows a value as a literal.

304

```
305 <core:numberOfPages>5</core:numberOfPages>
```

306

307 The example shows that the number of pages in this document is equal to 5.

308 This information is valid, and in the case of a property of integer data type, can be used accurately.
309 However, in the case of string literals, with a constrained set of values, it is better practice to use
310 references rather than literals as this reduces the scope for error – an RDF parser can check that
311 the reference is valid and that the value of the property is in fact one of the constrained string
312 values.

313 An example of a reference is shown below.

314

```
315 <fordLex:bodyAndInteriorTerm rdf:resource="&fordLex;BodyRepair" />
```

316

317 This describes a property value that the document in question relates to the term BodyRepair. The
318 reference bodyRepair is shown below.

319

```
320 <BodyAndInterior rdf:ID="BodyRepair">  
321 <rdfs:label xml:lang="en">body repair</rdfs:label>  
322 </BodyAndInterior>
```

323

324 In this reference, more information could be added, such as language variants of the term.

325 Another example of a string literal:

326

```
327 <core:validFrom>1999-06-01T09:00:00+01:00</core:validFrom>  
328 <core:validTo>2005-06-01T09:00:00+01:00</core:validTo>
```

329

330 Although these values are string literals, the schema for this term has been set to the W3C date
331 and time format (W3CDTF) and must comply with this standard. The schema is shown for
332 reference below.

333

```
334 <rdfs:Property rdf:ID="validFrom">  
335 <rdfs:label xml:lang="en">The starting validity of this resource</rdfs:label>  
336 <rdfs:domain rdf:resource="#Info" />  
337 <rdfs:range rdf:resource="&dcterms;W3CDTF" />  
338 </rdfs:Property>
```

339

```
340 <rdfs:Property rdf:ID="validTo">
341 <rdfs:label xml:lang="en">The ending validity of this resource</rdfs:label>
342 <rdfs:domain rdf:resource="#Info"/>
343 <rdfs:range rdf:resource="&dcterms;W3CDTF"/>
344 </rdfs:Property>
```

345

346 The schema range for these properties has been set to *&dcterms;W3CDTF* and the value must
347 conform to this standard.

348 4.7 Terminology

349 As well as the string literals defined in the RDF Schema in this Specification, there are meta data
350 properties that can take values from a lexicon of terms. Typically these properties are the *dc:subject*
351 properties that represent general meta data describing the subject matter of an information
352 package.

353 The string literals for these meta data could come from any suitably referenced lexicon. As part of
354 the work of this Technical Committee, lexicons have been made available by Ford Motor Company
355 for use as a reference for such string literals. An example of the usage of such a lexicon in meta
356 data is shown below:

357

```
358 <fordLex:bodyAndInteriorTerm rdf:resource="&fordLex;BodyRepair"/>
```

359

360 *fordLex* is the namespace; this describes the lexicon in use. *bodyAndInteriorTerm* property
361 describes the subgroup for the final term. This allows implementations to break down the large
362 vocabulary. Finally the *rdf:resource* references a term from within the lexicon, in this instance
363 *BodyRepair*.

364 Any other lexicon that is used in conjunction should follow the same standards. Below shows the
365 schema Class, Property and Instance being referenced in the above example.

366

```
367 <!-- Top Class, more of a container than anything -->
368 <rdfs:Class rdf:ID="FordLexicon">
369 <rdfs:label xml:lang="en">This is the ford lexicon top class</rdfs:label>
370 </rdfs:Class>
371
372 <!-- Subdomain: Body & Interior -->
373
374 <rdfs:Class rdf:ID="BodyAndInterior">
375 <rdfs:label xml:lang="en">Body &amp; Interior</rdfs:label>
376 <rdfs:subClassOf rdf:resource="#FordLexicon"/>
377 </rdfs:Class>
378
379 <rdfs:Property rdf:ID="bodyAndInteriorTerm">
380 <rdfs:label xml:lang="en">The Body &amp; Interior Class</rdfs:label>
381 <rdfs:domain rdf:resource="#FordLexicon"/>
382 <rdfs:range rdf:resource="#BodyAndInterior"/>
383 </rdfs:Property>
384
385 <!-- Term: body panel -->
386
387 <BodyAndInterior rdf:ID="BodyPanel">
388 <rdfs:label xml:lang="en">body panel</rdfs:label>
389 </BodyAndInterior>
```

390

391 The example shows two Classes, the container Class *FordLexicon*, and the *BodyAndInterior* Class
392 which is used for creating instances of that subClass. The property *bodyAndInteriorTerm*, is what
393 will be used when adding terms from this lexicon in metadata. It has a domain of *FordLexicon* and
394 the range must be an instance of the *BodyAndInterior* Class. Finally, the instance has also been
395 shown, this is what must be referenced from the main metadata.

396

397 4.8 Languages

398 This specification covers the use of string literals in multiple languages. When creating any string
399 literals or an instance of a Class, the attribute *xml:lang* should be used. The following example
400 shows this usage.

401

```
402 <rdfs:label xml:lang="en">body repair</rdfs:label>
```

403

404 The value for *xml:lang* must come from the ISO standard: 639-1 [N8] where two letter codes
405 describe the language in use. On this occasion *en* states the language in use is English. Qualifiers
406 are also allowed, so *en-US* describes that the language in use is American English. If no *xml:lang*
407 attribute is set, then the literal is available for any language, for example:

408

```
409 <rdfs:label>GlobalBrand</rdfs:label>
```

410

411 In this case, since *GlobalBrand* is an internationally known vehicle name, there is no need
412 for the *xml:lang* attribute to be set.

413 The use of *xml:lang* means that Class Instances like the example below can be used internationally
414 from one reference.

415

```
416 <Fuel rdf:ID="Petrol">  
417 <rdfs:label xml:lang="en">Petrol</rdfs:label>  
418 <rdfs:label xml:lang="fr">Gaz Liquide De Petroleum</rdfs:label>  
419 </Fuel>
```

420

421 The example shows that although the reference is:

422

```
423 <vid:fuelType rdf:resource="&vid;Petrol"/>
```

424

425 The implementation could easily pick up and use the French variant.

426 4.9 Navigation and Relationships between Packages

427 Navigation and relationships between documents play a large part in metadata discovery. Where
428 information packages are presented through a Web site, there will be relationships (both implicit
429 and explicit) between the packages and the way in which users can navigate between them.

430 Once packages are removed from the context of the Web site, those relationships can be
431 preserved through the use of meta data that describe the relationships. A full set of meta data that
432 capture such relationships has been developed by the Dublin Core Metadata Initiative [N5]. It is

433 recommended that these Dublin Core meta data be used wherever it is necessary to describe the
434 relationships between information packages.

435 The example below shows how relationship navigation metadata can be added to a description.

436

437 `<dcterms:isPartOf rdf:resource="https://erwin.volkswagen.de/en/docs/bPAS5320.pdf" />`

438

439 The above explains that the document being describe is part of another document (in this case
440 fictional). The full set of Dublin Core relationship metadata terms for use with this Specification is
441 described below:

442

443 **Namespace:**

444 <http://purl.org/dc/terms/>

name	label	definition	uri
isVersionOf	Is Version Of	The described resource is a version, edition, or adaptation of the referenced resource. Changes in version imply substantive changes in content rather than differences in format.	http://purl.org/dc/terms/isVersionOf
hasVersion	Has Version	The described resource has a version, edition, or adaptation, namely, the referenced resource.	http://purl.org/dc/terms/hasVersion
isReplacedBy	Is Replaced By	The described resource is supplanted, displaced, or superseded by the referenced resource.	http://purl.org/dc/terms/isReplacedBy
replaces	Replaces	The described resource supplants, displaces, or supersedes the referenced resource.	http://purl.org/dc/terms/replaces
isRequiredBy	Is Required By	The described resource is required by the referenced resource, either physically or logically.	http://purl.org/dc/terms/isRequiredBy
requires	Requires	The described resource requires the referenced resource to support its function, delivery, or coherence of content.	http://purl.org/dc/terms/requires

name	label	definition	uri
isPartOf	Is Part Of	The described resource is a physical or logical part of the referenced resource.	http://purl.org/dc/terms/isPartOf
hasPart	Has Part	The described resource includes the referenced resource either physically or logically.	http://purl.org/dc/terms/hasPart
isReferencedBy	Is Referenced By	The described resource is referenced, cited, or otherwise pointed to by the referenced resource.	http://purl.org/dc/terms/isReferenced By
references	References	The described resource references, cites, or otherwise points to the referenced resource.	http://purl.org/dc/terms/references
isFormatOf	Is Format Of	The described resource is the same intellectual content of the referenced resource, but presented in another format.	http://purl.org/dc/terms/isFormatOf
hasFormat	Has Format	The described resource pre-existed the referenced resource, which is essentially the same intellectual content presented in another format.	http://purl.org/dc/terms/hasFormat
conformsTo	Conforms To	A reference to an established standard to which the resource conforms.	http://purl.org/dc/terms/conformsTo

446
447
448
449

5 Namespaces

The following namespaces are defined in this Specification. The reference to the requirements covered is to sections in the document SC1-D2 Autorepair Requirements Specification [3].

Namespace	Description	Requirements Covered
Core	Base information about the information packages, their format, language and information type.	2.1, 2.2, 3.9, (3.3, 3.4, 3.5.4 to 3.5.8)
Access	How to subscribe to and access the information packages	2.3 2.5, (3.4)
VehicleID	Meta data to identify the vehicle	3.1
Component	Meta data describing information on a component	3.5.1
Training	Meta data describing training information	3.6
Tools	Meta data describing special tools	3.7, 3.8
Diagnosis, repair, service	Pass-through programming, Symptoms, DTC.	3.2.1 to 3.2.3, 3.5.2
Terminology	Lexicons, representing terminology in multiple languages, covering standard terminology recommended by the OASIS TC and non-standard terminology.	3.9

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460

The Autorepair Specification also uses metadata terms from three other vocabularies:

1. Dublin Core (dc & dcterms) [N5]
Used for navigation and the most common descriptive types: Title, Description, Source.
2. UBL (Universal Business Language) [N6]
Used for common commerce types: Cost, CurrencyID
3. Contact (W₃C Contact Information) [N7]
Used for common contact types: Street, City, PostalCode.

The full definition of meta data in each namespace is included in Appendix A.

461

6 Information Package Collections

462
463
464
465

A key factor in making this Specification implementable, is that information packages should be described usefully without an undue burden on the organisation producing the meta data. Key to this is that there should be some mechanism whereby meta data can be described for a collection of information packages, without having to be repeated for each one.

466
467
468

Where the same meta data can be attributed to more than one information package, this Specification follows the RDF standard, with a recommendation on how the standard can be used in practice.

469
470
471
472

To illustrate the concepts of information package collections we will use six information sample packages from BMW. The first three packages have information on the engine coolant for all BMW vehicles; the other three packages have information on Car and Key Memory for E46 series vehicles.

473
474

All packages are available by subscription from BMW in HTML format in the English language. (The URIs used are for the purposes of illustration only).

475

Package URI	Description
www.bmw.de\USP-EU-SBS\SBS1996-170196140_A3	Approved anti-freezing and anti-corrosive agents
www.bmw.de\USP-EU-SBS\SBS1996-170196140_A2	Change interval, changing and testing coolant, disposal, cleaning the cooling system
www.bmw.de\USP-EU-SBS\SBS1996-170196140_A1	Requirements concerning engine coolant
www.bmw.de\USP-EU-SBT\SBT1998-610198293	Car and Key Memory
www.bmw.de\USP-EU-SBT\SBT1998-610198293_ANL1	Summary of "Car and Key Memory" functions for E46 vehicles
www.bmw.de\USP-EU-SBT\SBT1998-610198293_ANL2	Explanatory notes for the "Car and Key Memory"

476
477

The meta data associated with these information packages is split into four sets, which can be associated with each relevant package, with repeating the meta data on each:

478

- Meta data associated with any BMW information package

479

- Meta data associated with E46 vehicles

480

- Meta data associated with packages about "Car Key and Memory"

481

- Meta data associated with packages about "Engine Coolant"

482

483

```
<rdf:Description
  rdf:about=" resource="www.bmw.de\USP-EU-SBS\SBS1996-170196140_A3">
  <dc:Title> Approved anti-freezing and anti-corrosive agents </dc:Title>
  <core:Info rdf:resource="#bmw"/>
  <core:Vehicle rdf:resource="#E46"/>
```

484

485

486

487

```
488 </rdf:Description>
489
490 <core:Info rdf:ID="bmw">
491 <core:textFormat>HTML</core:textFormat>
492 <core:language>EN</core:language>
493 <access:medium>Internet</access:medium>
494 <access:chargingModel>subscription</access:chargingModel>
495 </core:Info>
496
497 <core:Info rdf:ID="coolant">
498 <term:term>Coolant</term:term>
499 </core:Info>
500
501 <core:Info rdf:ID="carandkeymemory ">
502 <dc:subject>Car Memory</dc:subject >
503 <dc:subject >Key Memory</dc:subject >
504 </core:Info>
505
506 <vid:Vehicle rdf:ID="E46">
507
508 </vid:Vehicle>
509
```

510 In this example, references to the meta data collections are to resources in the same file, but in
511 practice the rdf:resource attributes can reference a URI, so that the collections can be held in
512 separate resource files.

513 7 Implementation

514 7.1 An Implementation Scenario

515 Any vehicle can be uniquely identified by a Vehicle Identification Number (VIN). The unique
516 identifier may be different in different markets within the EU.

517 It is not expected that information producers (or others) would associate the VIN with each
518 information package as meta data. Instead meta data would describe the vehicle make, model, etc.

519 Hence there is a requirement for a 'VIN resolution' service which returns basic information about a
520 vehicle, given its VIN. This service would be independent of the meta data used to describe
521 information packages, but could use the OASIS Autorepair standard in the way described below.

522 For information packages, a distinction can be made between a *registry* which records the
523 information packages available and the meta data about them, and a *repository* which contains the
524 information packages themselves. There are many scenarios that could be envisaged for the
525 implementation of registries and repositories, but one such scenario is of one or more central
526 registries (ie automotive information portals) and registries run by information producers and
527 information providers, which just served the packages they published.

528 As an example, the diagram shows a sequence of messages between an information consumer
529 and three Internet services:

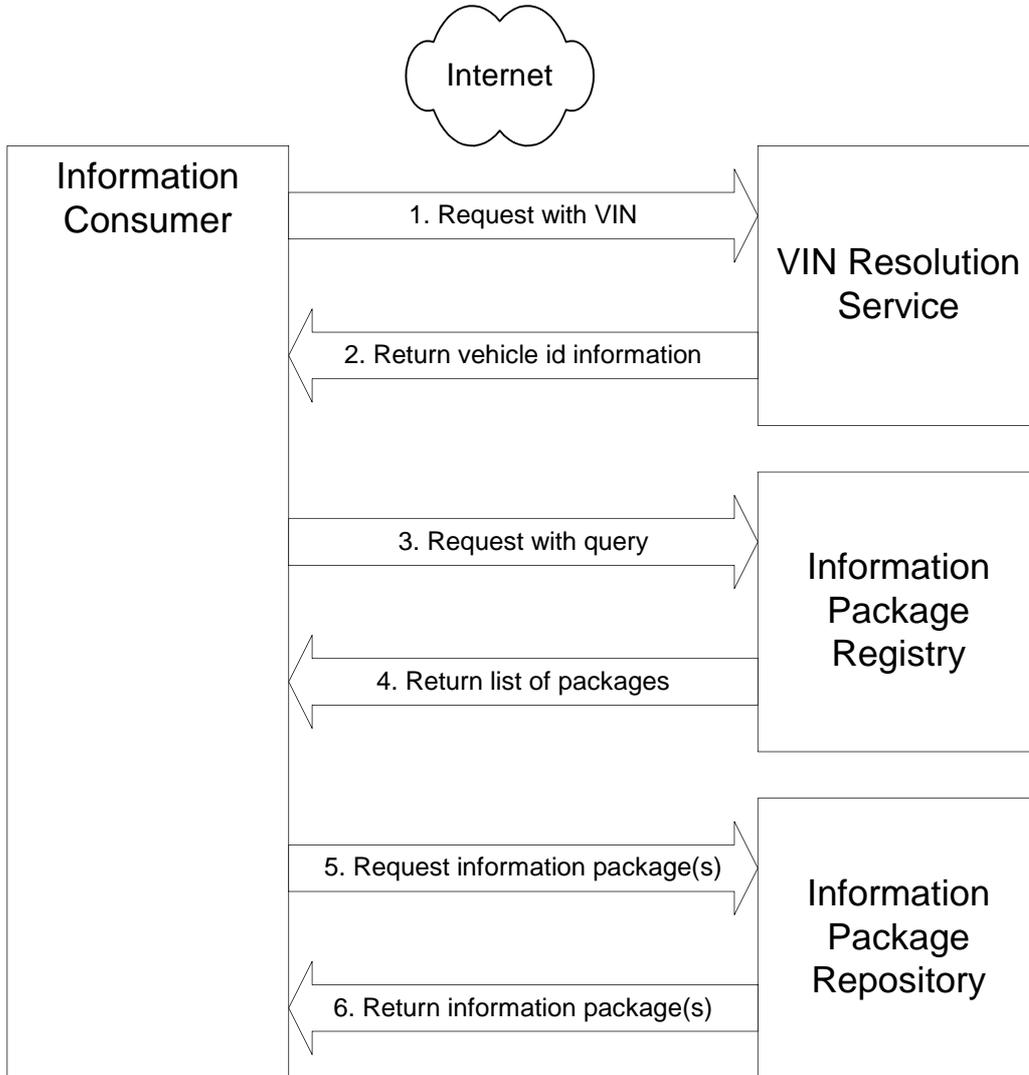
- 530 • VIN Resolution Service
531 Returns meta data about a vehicle, given its VIN.
- 532 • Information Package Registry
533 Returns meta data about information packages, given a description of the type of
534 information being sought.
- 535 • Information Package Repository
536 Returns identified information packages, subject to necessary payment and access
537 permissions.

538

539 Details of how these Internet services are implemented and how the messages are formulated,
540 transported and interpreted are outside the scope of this Specification.

541 Each message that passes may include OASIS autorepair meta data as shown in the table below.

542



543
544
545
546

Step	Meta data passed
1. Information consumer finds VIN and sends request to VIN Resolution Service	<code><vid:vin>ABC1234567DEF</vid:vin></code>
2. The VIN Resolution Service returns full details of that vehicle, including its make, model, derivative, fuel type, etc	<code><rdf:Description about="ABC1234567DEF"> <core:Vehicle rdf:resource="&vwuri;passatSport" /> </rdf:Description></code>

Step	Meta data passed
3. The information consumer describes the information package(s) they are looking for and this data is combined with the data from the VIN Resolution Service and sent to the Information Package Registry.	<pre data-bbox="513 504 1375 533"><core:Vehicle rdf:resource="&vwuri;passatSport" /></pre>
4. The Information Package Registry matches the description of the package being sought with meta data describing the available information packages and returns a list to the consumer.	<pre data-bbox="513 750 1375 1014"><rdf:Description about="www.bmw.de\USP-EU-SBS\SBS1996-170196140_A3"> <dc:Title>Body Repairs</dc:Title> <dc:Description>Document Supplement No. 9</dc:Description> <dc:Language>EN</dc:Language> <core:Info rdf:resource="#PAS.5320.20.20" /> <core:Vehicle rdf:resource="#passat97" /> <access:Channel rdf:resource="#VW001" /> </rdf:Description></pre>
5. The consumer selects the information package they want, examines the access information and requests the package from the Information Package Repository.	<pre data-bbox="513 1176 1375 1227"><rdf:Description about="www.bmw.de\USP-EU-SBS\SBS1996-170196140_A3"></pre>
6. The Information Package Repository returns the information package to the consumer.	

547

548 7.2 Conformance Levels

549 This Specification defines a set of meta data that can be applied to information packages. No
550 assumption is made as to the degree to which future systems may use these meta data. However,
551 it is recognised that not all systems will support the meta data to the same degree.

552 Hence the Specification proposes a series of conformance levels, numbered from 1 to 4, where 1 is
553 the lowest level of conformance and 4 the highest. The levels are cumulative, in the sense that
554 conformance at level 2 implies level 1 conformance as well.

555

556 Each item of meta data could be assigned a conformance level, so that a system conforming, say,
557 to level 3 would be able to handle all meta data designated as levels 1, 2 and 3.

558

Conformance Level	Description
1	Meta data that could reasonably be expected to be generated automatically by most information producers and enable them to provide an Information Package Repository service.
2	Meta data considered necessary by information consumers to request information on emissions related repairs. The minimum meta data required to run a VIN Resolution Service and an Information Package Registry service.
3	Additional meta data that would be considered important by producers, consumers or providers to improve the quality or timeliness of repairs and enhance the usefulness of an Information Package Registry service.
4	All other meta data – this category of meta data could be considered 'nice to have'.

559 Support at a particular conformance level does not imply that all information packages must be
560 described by every piece of information at that level.

561 For example, if an information package was applicable to all BMW vehicles it would not be
562 necessary to create meta data listing every model to which that package applied. Similarly, if a
563 package applied to a particular model of vehicle it would not be necessary to list every derivative
564 and trim level.

565 **7.3 Combining Meta Data**

566 Meta data describing an information package may be combined from multiple sources. This allows
567 many different scenarios for the implementation of this Specification, for example:

568 An information producer provides meta data at conformance level 1 and an information provider
569 implements a registry service by adding meta data at conformance level 2.

570 An information producer supplies OASIS autorepair meta data at conformance level 2, and an
571 information provider enhances those meta data with additional level 3 properties.

572 An information consumer adds their own properties at conformance level 4 which can be accessed
573 and used only by persons authorised by that consumer.

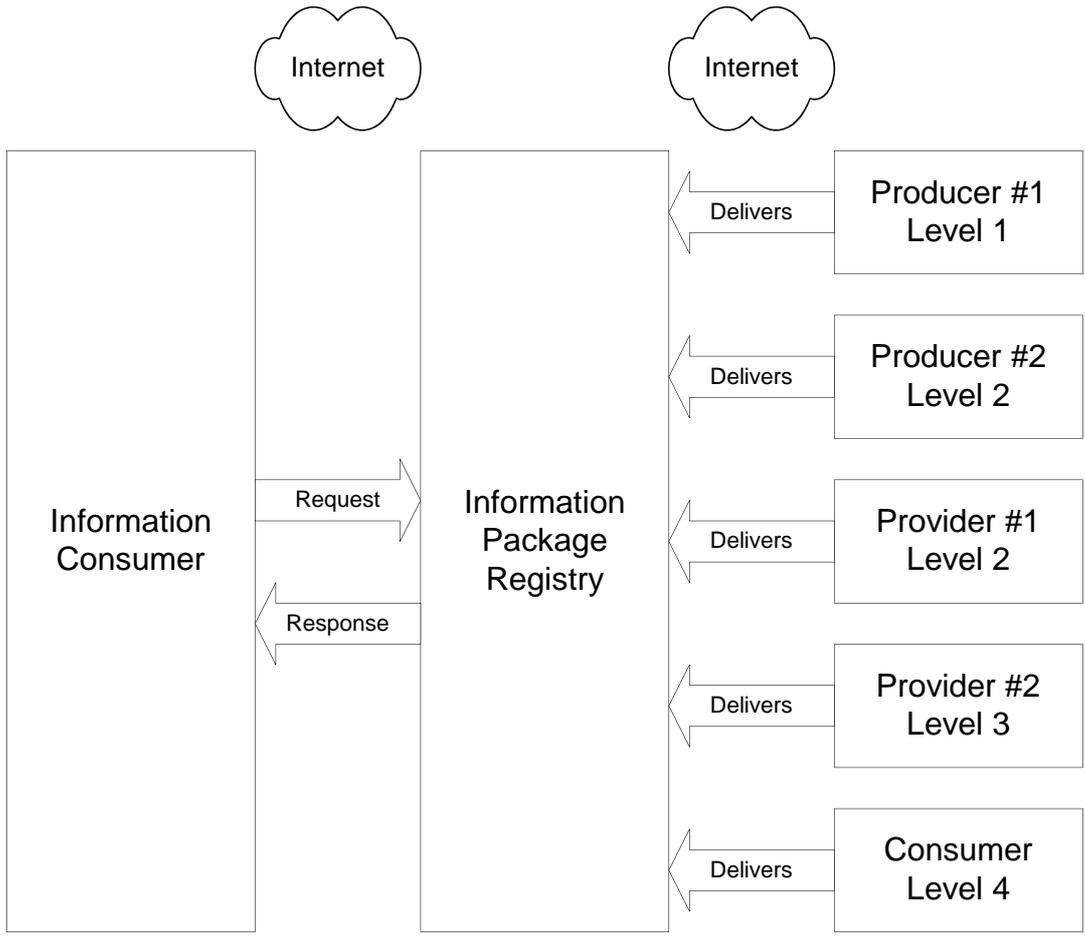
574 This concept can be illustrated by considering in more detail the Information Package Registry
575 introduced earlier.

576 The Registry services queries from consumers who are seeking information packages to help them
577 repair a vehicle. The response to the query is information on how information packages can be
578 accessed from a Repository.

579 The Registry also acts as an aggregation engine, collecting meta data from multiple sources and
580 combining them together to build a complete description of information packages that can then be
581 used to match more accurately the requirements of the consumer.

582 The figure shows a Registry service which aggregates meta data at various conformance levels
583 from producers, providers and consumers.

584



587

8 References

588

8.1 Normative

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- 591 [N2] IETF (Internet Engineering Task Force) RFC 2396: Uniform Resource
592 Identifiers (URI): Generic Syntax, eds. T. Berners-Lee, R. Fielding, L.
593 Masinter. August 1998.
- 594 [N3] Resource Description Framework (RDF) Model and Syntax Specification.
595 Eds. Ora Lassila, Ralph R. Swick. [http://www.w3.org/TR/1999/REC-rdf-](http://www.w3.org/TR/1999/REC-rdf-syntax-19990222)
596 [syntax-19990222](http://www.w3.org/TR/1999/REC-rdf-syntax-19990222)
- 597 [N4] Resource Description Framework (RDF) Schema Specification 1.0. Eds.
598 Dan Brickley, R.V. Guha <http://www.w3.org/TR/rdf-schema>
- 599 [N5] The Dublin Core Metadata Initiative, <http://dublincore.org>
- 600 [N6] UBL (Universal Business Language)
- 601 [N7] Contact (W₃C Contact Information)
- 602 [N8] ISO standard: 639-1
- 603

604

8.2 Non-normative

- 605 [1] Charter for the Formation of an OASIS Technical Committee - Format of
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607 John Chelsom, CSW Group Ltd; Mr Takayuki Sakai, JAMA – Japanese
608 Automobile Manufacturers Association; Mr Chris Jones, RAC Motoring
609 Services. <http://www.oasis-open.org/committees/autorepair/charter.php>
- 610 [2] Namespaces in XML. Eds Tim Bray, Dave Hollander, Andrew Layman
611 <http://www.w3.org/TR/REC-xml-names>
- 612 [3] SC1-D2 Autorepair Requirements Specification. [http://www.oasis-](http://www.oasis-open.org/committees/documents.php)
613 [open.org/committees/documents.php](http://www.oasis-open.org/committees/documents.php)
- 614 [4] SC1-D4 Use Cases – for the OASIS Autorepair Specification
615 <http://www.oasis-open.org/committees/documents.php>
- 616
- 617

618

Appendix A. Namespace Definitions

619 This Appendix contains a listing of the resources and properties (meta data items) contained in the
620 Specification. For a formal definition of the resource classes and properties, please refer to the
621 RDFS schema definitions that accompany this document.

622

623 The core namespace

624 Base information about the information packages, their format, language and information type.

625 This namespace covers the requirements specified in SC1-D2, sections 2.1, 2.2, 3.9, and the
626 formatting requirements in 3.4.

627

628 Namespace:

629 <http://www.autorepair.eu.com/2003/05/core#>

630

name	data type	Values/instances	comments
Info	resource		Info resource container class. Holds properties of the information package itself.
infoType	reference	Service Maintenance OBDPlugLoc Recall Repair TTorques TechData TSB Diag Training Tools	The type of information contained in the package.
Language	DC	ISO 3166-1-Alpha-2	Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Language
subject	DC		Dublin Core namespace term
textFormat	reference	ASCII HTML XML PDF	Text format of the package

name	data type	Values/instances	comments
graphicFormat	reference	SVG JPEG GIF TIFF PNG	Graphics format of the package. Note that a package in HTML or XML text format may reference graphics, which should be in one or more of the formats listed as a graphicFormat
validFrom	W3CDTF	http://www.w3.org/TR/NOTE-datetime	The date from which this information package is valid
validTo	W3CDTF	http://www.w3.org/TR/NOTE-datetime	The date to which this information package is valid
version	string		Version of the Document (optional)
title	DC		Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Title
description	DC		Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Description
numberOfPages	integer		The number of pages in a page-formatted information package.
fileSize	integer		References units#Kb
plugInType	resource	acrobatReader	Information about any browser plug-in required to view the information package

631

632

632 **The access namespace**

633

634 **Namespace:**

635 <http://www.autorepair.eu.com/2003/05/access#>

636 How to subscribe to and access the information packages.

637 This namespace covers the requirements set out in SC1-D2, sections 2.3, 2.5, and the access and
638 charging requirements in section 3.4.

639

name	data type	values	comments
Channel	resource		An access channel - may be more than one for any information package
channelMedium	reference	Internet CD PTP Riag DVD Tele	Used to describe channel resource
chargingModel	Reference	Free PPV PPU Subscription Order Job	Used to describe channel resource. Order covers an order for CD (or paper-based information)
Subscription	resource		Details of the subscription - how to sign up and pay for it
subscriptionPeriod	string		
cost	UBL		Costing information in UBL Namespace urn:oasis:names:tc:ubl:CommonAggregateTypes:1.0:0.70
accessLocation	DC		Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Source
Order	resource		Details of placing an order (for CD, etc)
cost	UBL		Costing information in UBL Namespace urn:oasis:names:tc:ubl:CommonAggregateTypes:1.0:0.70
accessLocation	DC		Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Source
PayPerView	resource		Details of placing an order (for CD, etc)
cost	UBL		Costing information in UBL Namespace urn:oasis:names:tc:ubl:CommonAggregateTypes:1.0:0.70

name	data type	values	comments
accessLocation	DC		Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Source
PayPerUse	resource		
cost	UBL		Costing information in UBL Namespace urn:oasis:names:tc:ubl:CommonAggregateTypes:1.0:0.70
accessLocation	DC		Dublin Core Namespace used: http://purl.org/dc/elements/1.1/Source

640
641

641 **The VID (Vehicle Identification) Namespace**

642

643 **Namespace:**

644 <http://www.autorepair.eu.com/2003/05/vid#>

645

646 Meta data to identify the vehicle

647 This namespace covers the requirements in SC1-D2, section 3.1.

648

name	data type	values	comments
Vehicle	resource		Resource that represents the vehicle itself
vinStart	string		The vehicle identification number that uniquely defines a vehicle.
vinEnd	string		The vehicle identification number that uniquely defines a vehicle.
manufacturerID	string		Manufacturer specific ID, e.g. oval plate number for Renault ricambi number for Fiat, Alfa Romeo, Lancia
modelType	reference	Manufactures own	Referenced out to manufacturers own
derivative	string		Used to describe the vehicle resource.
modelYearStart	string	YYYY/MM	Used to describe the vehicle resource.
modelYearEnd	string	YYYY/MM	can be empty if model is still in production.
landOfHomologation	string	ISO 3166-1	ITA = Italy etc.
optionalEquipment	reference	Any lexicon term	
manufacturerType	reference		References to manufacturers#
vehicleMake	reference		References to manufacturers#
Body	resource		
bodyStyle	reference	Sedan Estate Coupe Convertible	References to vin#
numberOfDoors	integer		Used to describe the body resource. The number of doors.

name	data type	values	comments
wheelBase	float		
axleRatio	ratio		
grossVehicleWeight	float		
Engine	resource		
engineCapacity	integer		units - cc, liter
engineCode	integer		
engineType	string		
horsePower	float		units - PS, KW
cylinders	integer		
valvesPerCylinder	integer		
camshaft	reference	DOHC SOHC OHC OHV	
fuelType	reference	Diesel Petrol LPG	
aspiration	reference	Turbo NA Compressor Intercooled	
catalyst	Boolean	T or F	
ECU	resource		
ECUBrandType	reference		
ECUTechNameType	reference		
Transmission	resource		
transmissionType	reference	Manual Auto SemiAuto	
driveType	reference	FWD	

name	data type	values	comments
		RWD AWD	
numberOfGears	integer		

649

649 **The component namespace**

650 **Namespace:**

651 <http://www.autorepair.eu.com/2003/05/components#>

652 Meta data describing information on a component

name	data type	values	comments
Component	resource		A component
majorFunctions	string		Describes a component
auxiliaryFunctions	string		Describes a component
manPartNumber	string		Describes a component
manPartName	string		Describes a component
isoPartName	string		
componentInfoIncluded	reference	ComponentImage PartLocation CircuitDiagram ConnectionDiagram FuncDesc RemoveAndRefit	
testInfoIncluded	reference	TestDesc TestProc ConnDetails ProtocolInfo TypicalValues TypicalElecValues FailureValues FailureMode ReInitProc	

653

654

655

655 **The training namespace**

656 **Namespace:**

657 <http://www.autorepair.eu.com/2003/05/training#>

658 Meta data describing information on training courses, etc.

name	data type	values	comments
CourseInfo			
courseType	reference	Classroom Online HomeStudy	
organiser	string		
subject	DC		Dublin Core namespace term
cost	UBL		UBL elements used
targetAudience	string		3.6.4
			3.6.4 Skills & knowledge evaluation tools used
Qualification	string		3.6.4 Qualification/certification/attendance certificate/ resulting from the training (issued by training provider).
certification	string		
attendCertification	string		
ClassroomCourse			
date	DC		Dublin Core elements used
duration	integer		minutes or hours or days
vacancies	integer		
courseLocation			
country	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/contact#
city	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/

			contact#
postalCode	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/ contact#
street (street2, street3)	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/ contact#
mailbox	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/ contact#
homepage	string		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/ contact#
fax	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/ contact#
phone	Contact NS		Contact Namespace Elements Used http://www.w3.org/2000/10/swap/pim/ contact#
OnlineCourse			
onlineMedia	reference	DVD CDAudio CDROM VHS Internet	
source	DC		Dublin Core Element

659

660

660 **The tools namespace**

661 **Namespace:**

662 <http://www.autorepair.eu.com/2003/05/toolInfo#>

663 Meta data for the description of special tools

664

name	data type	values	comments
ToolInfo			
toolType	reference	Special Electronic	
purpose	string		
Cost	UBL		UBL Namespace elements used
orderInfo	string		
delTimescale	number		
instructions	string		
manPartNumber	string		
manPartName	string		

665

666

667 **The diagnosis-repair-service namespace**

668 **Namespace:**

669 <http://www.autorepair.eu.com/2003/05/diagnostic#>

670 Pass-through programming, symptoms, DTC

671

name	data type	values	comments
DiagTest	resource		A diagnostic test
J2012Code	string		
manufacturerCode	string		
testDescription	boolean		
connectionDetails	boolean		
Symptom			
symDesc	string		

symName	string		
hintsTips	string		
JobInfo			
jobDescription	string		
jobTime	integer		minutes

672

673 **The terminology namespace**

674 **Namespace:**

675 The namespace will depend on the lexicon, for example

676 <http://www.autorepair.eu.com/2003/05/fordLexicon#>

677

name	data type	values	comments
subDomain	string		For example, 'Climate Control' is the domain for the term 'A/C condenser'
term	string		

678

679

Appendix B. Sample Meta Data

681 This sample shows a full set of meta data for an information package. It does not include every item
682 of meta data in the Specification, but serves as an example of how meta data is structured.

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```

<?xml version="1.0"?>
<!DOCTYPE rdf:RDF [
  <!ENTITY xsd 'http://www.w3.org/2001/XMLSchema-datatypes'>
  <!ENTITY dcterms 'http://purl.org/dc/terms/'>
  <!ENTITY access 'http://www.autorepair.eu.com/2003/05/access#'>
  <!ENTITY core 'http://www.autorepair.eu.com/2003/05/core#'>
  <!ENTITY manu 'http://www.autorepair.eu.com/2003/05/manufacturers#'>
  <!ENTITY model 'http://www.autorepair.eu.com/2003/05/models#'>
  <!ENTITY vid 'http://www.autorepair.eu.com/2003/05/carSchema#'>
  <!ENTITY measure 'http://www.autorepair.eu.com/2003/05/measure#'>
  <!ENTITY fordLex 'http://www.autorepair.eu.com/2003/05/fordLexicon#'>
]>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:access="http://www.autorepair.eu.com/2003/05/access#"
  xmlns:vid="http://www.autorepair.eu.com/2003/05/carSchema#"
  xmlns:manu="http://www.autorepair.eu.com/2003/05/manufacturers#"
  xmlns:core="http://www.autorepair.eu.com/2003/05/core#"
  xmlns:ubl="urn:oasis:names:tc:ubl:CommonAggregateTypes:1.0:0.70"
  xmlns:measure="http://www.autorepair.eu.com/2003/05/measure#"
  xmlns:contact="http://www.w3.org/2000/10/swap/pim/contact#"
  xmlns:fordLex="http://www.autorepair.eu.com/2003/05/fordLexicon#"
  xml:base="http://www.autorepair.eu.com/2003/05/#">
  <rdf:Description
    rdf:about="https://erwin.volkswagen.de/en/docs/bPAS53202020.pdf">
    <dc:Title>Body Repairs</dc:Title>
    <dc:Description>Document Supplement No. 9</dc:Description>
    <dc:Language>EN</dc:Language>
    <core:Info rdf:resource="#PAS.5320.20.20"/>
    <core:Vehicle rdf:resource="#passat97"/>
    <access:Channel rdf:resource="#VW001"/>
    <dcterms:isPartOf
      rdf:resource="https://erwin.volkswagen.de/en/docs/bPAS5320.pdf"/>
  </rdf:Description>
  <core:Info rdf:ID="PAS.5320.20.20">
    <core:infoType rdf:resource="#core;Repair"/>
    <core:textFormat rdf:resource="#core;PDF"/>
    <fordLex:bodyAndInteriorTerm rdf:resource="#fordLex;bodyRepair"/>
    <core:validFrom>1999-06-01T09:00:00+01:00</core:validFrom>
    <core:validTo>2005-06-01T09:00:00+01:00</core:validTo>
    <core:version>1.0</core:version>
    <core:numberOfPages>5</core:numberOfPages>
    <core:fileSize rdf:parseType="Resource">
      <rdf:value>100</rdf:value>
      <measure:unit rdf:resource="#measure;Kb"/>
    </core:fileSize>
    <core:PlugIn rdf:resource="#core;acrobatReader"/>
  </core:Info>

```

```

738 <vid:Vehicle rdf:ID="passat97">
739   <vid:Model rdf:resource="#Passat97"/>
740   <vid:Body rdf:resource="#Passat97.Body"/>
741   <vid:Engine rdf:resource="#Passat97.Engine"/>
742 </vid:Vehicle>
743
744 <vid:Model rdf:ID="Passat97">
745   <vid:modelType rdf:resource="&model;Passat"/>
746   <vid:manufacturerType rdf:resource="&manu;Volkswagen"/>
747   <vid:modelYearStart>1997/01</vid:modelYearStart>
748   <vid:modelYearEnd>2005/09</vid:modelYearEnd>
749   <vid:landOfHomologation>FRA</vid:landOfHomologation>
750   <vid:optionalEquipment rdf:resource="&fordLex;AC"/>
751   <vid:optionalEquipment rdf:resource="&fordLex;ABS"/>
752   <vid:optionalEquipment rdf:resource="&fordLex;airBag"/>
753 </vid:Model>
754
755 <vid:Body rdf:ID="Passat97.Body">
756   <vid:bodyStyle rdf:resource="&vid;Sedan"/>
757   <vid:numberOfDoors>5</vid:numberOfDoors>
758   <vid:wheelBase>267</vid:wheelBase>
759   <vid:grossVehicleWeight>1650</vid:grossVehicleWeight>
760 </vid:Body>
761
762 <vid:Engine rdf:ID="Passat97.Engine">
763   <vid:engineCode>XUD 19</vid:engineCode>
764   <vid:axelRatio>3.55:1</vid:axelRatio>
765   <vid:horsePower rdf:parseType="Resource">
766     <rdf:value>90</rdf:value>
767     <measure:unit rdf:resource="&measure;PS"/>
768   </vid:horsePower>
769   <vid:camshaft rdf:resource="&vid;DOHC"/>
770   <vid:aspiration rdf:resource="&vid;Turbo"/>
771   <vid:fuelType rdf:resource="&vid;Petrol"/>
772   <vid:driveType rdf:resource="&vid;FWD"/>
773   <vid:numberOfgears>6</vid:numberOfgears>
774   <vid:transmissionType rdf:resource="&vid;Manual"/>
775   <vid:cylinders>4</vid:cylinders>
776   <vid:valvesPerCylinder>4</vid:valvesPerCylinder>
777   <vid:catalyst>T</vid:catalyst>
778 </vid:Engine>
779
780 <access:Channel rdf:ID="VW001">
781   <access:channelMedium rdf:resource="&access;Internet"/>
782   <access:channelMedium rdf:resource="&access;PTP"/>
783   <access:chargingmodel rdf:resource="&access;Subscription"/>
784   <access:subscriptionPeriod rdf:resource="#VWSub001"/>
785 </access:Channel>
786
787 <access:SubscriptionInfo rdf:ID="VWSub001">
788   <access:subscriptionPeriod rdf:parseType="Resource">
789     <rdf:value>1</rdf:value>
790     <measure:unit rdf:resource="&measure;Days"/>
791   </access:subscriptionPeriod>
792   <access:costingType rdf:resource="#VWStdSubCharge"/>
793 </access:SubscriptionInfo>
794
795 <access:Cost rdf:ID="VWStdSubCharge">
796   <ubl:PriceAmount>100</ubl:PriceAmount>
797   <ubl:CurrencyID>USD</ubl:CurrencyID>
798   <ubl:ID>PAS.5320.20.20</ubl:ID>
799   <contact:ContactLocation rdf:ID="#VWSubscriptionHQ"/>
800 </access:Cost>

```

```
801 <!-- Address information should be held in separate documents -->
802
803 <contact:Address rdf:ID="VWSubscriptionHQ">
804   <contact:Street>Head of Corporate Communications</contact:Street>
805   <contact:Street2>Letter box 19700</contact:Street2>
806   <contact:PostalCode>D-38436</contact:PostalCode>
807   <contact:City>Wolfsburg</contact:City>
808   <contact:Country>DEU</contact:Country>
809   <contact:phone>+49 (0)5361 923 155</contact:phone>
810   <contact:fax>+49 (0)5361 921 473</contact:fax>
811   <contact:mailbox rdf:resource="mailto:subs@volkswagen.de"/>
812 </contact:Address>
813 </rdf:RDF>
```

814

Appendix C. Statements from Participating Organisations

815

816 The following statement is made by the Japanese Automotive Manufacturers Association (JAMA),
817 some of whose members contributed to the work of the Technical Committee:

818

819 *JAMA and its participating members have greatly appreciated the opportunity to actively*
820 *participate in the discussion on the distribution of emission-related information. JAMA*
821 *wishes to reiterate the fact that throughout the process we have sought to emphasise the*
822 *fact that the aspect of cost should be an essential part of any development planning*
823 *process.*

824 *Since this OASIS Technical Committee has thus far not taken this aspect into account, we*
825 *feel, we cannot officially endorse the content of this document, which in our view now*
826 *represents an "unofficial product of various discussions".*

827

Appendix D. Revision History

Rev	Date	By Whom	What
0.1		John Chelsom, CSW	First version – draft for discussion by SC2 prior to TC Meeting on 14 th March 2003.
0.2		John Chelsom, CSW	Version approved for discussion by members of the SC2 working group (now identified in the authors section of the document control)
0.3	11 May 2003	Philip Johnstone, CSW	Version produced using OASIS template for review by SC2 and SC1 working groups
0.4	16 May 2003	CSW	For review by the members of the OASIS Auto Repair Technical Committee

830

Appendix E. Vocabulary Recommendations

831 This appendix minutes the recommendations of the SC3 sub committee. This sub committee was
 832 concerned with vocabulary, where vocabulary is taken to mean component names and physical
 833 attributes of the vehicle.

834

Ref.	Recommendations
1	<p>This subcommittee recommends that ISO standard 15031-2 (SAE J1930) is used as a basis for vocabulary. It covers emissions related components and is available in English and French.</p> <p>Because European manufacturers exporting vehicles to the United States are already required to provide documentation in accordance with this standard, it is difficult to see how any other standard could be acceptable unless it is a superset of this vocabulary and terminology.</p>
2	<p>The ISO 15031-2 emphasis is on gasoline engine emissions. Extensions to cover additional components and others unique to European diesel engines, including pipeline injection and common rail systems, will be required.</p>
3	<p>This subcommittee recommends that ISO standard 15031-6 (SAE J2012) is used for DTC definitions. It is currently available in English and French.</p>
4	<p>The subcommittee recommend that the Commission identify the languages which will be required.</p>
5	<p>A body needs to be set up and funded to translate the extended set of ISO15031-2 vocabulary and ISO 15031-6 DTC definitions into all the required languages.</p> <p>The first action would be to ask the commission to make an application to ISO to ask its E.U. member states to perform this service.</p> <p>Proposed translations should be verified for acceptability by each manufacturer or their national representatives. The criteria for acceptability will be that in all languages the proposed term must be clear, unambiguous, and not easily confused with a similar term that has been used previously with a different meaning.</p>
6	<p>The manufacturers agree, in principle, to use the new vocabulary for new documentation produced after an agreed date.</p> <p>Individual manufacturers may decide that their vehicles in service can be adequately covered without providing translations in all languages.</p>

835

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